REMARKS

On pages 2 and 3 of the Office Action, the Examiner objected to the specification for not providing antecedent for the terms "first software," "second software," "third software," "fourth software," "fifth software," "sixth software," and "seventh software," as used in certain of the claims.

However, the specification does provide antecedent for these terms. Indeed, Figure 8 and the description corresponding thereto discloses and describes the software that is the subject of claims 15-20.

Purely as an example and in no way limiting to the interpretation of these claims, the first software of claim 15 relates to S01 and its written description, the second software of claim 15 relates to S02 and S03 and their written descriptions, the third software of claim 15 relates to S04 and its written description, the fourth software of claim 15 relates to S06 and S07 and their written descriptions, and the fifth software of claim 15 relates to S08 and its written description.

Also, and again purely as an example and in no way limiting to the interpretation of these claims, the sixth software of claim 16 relates to S03 and its written

description. (Claim 16 has been amended to remove reference to seventh software.)

Further, and again purely as an example and in no way limiting to the interpretation of these claims, the sixth software of claim 17 relates to the software executed by the engine of the unit 18 shown in Figure 5. The written description of this software is provided in paragraphs 0047 through 0051 of the substitute specification.

Claim 18 merely provides that the invention of claim 15 operates in connection with a network as shown in Figure 1 and the written description corresponding thereto.

Claim 19 merely provides that the invention of claim 15 operates in connection with an externally connected bus as shown in Figure 2 and the written description corresponding thereto.

Claim 20 has antecedent in the specification in a similar manner.

One more comment is appropriate. The use of the qualifiers "first,' "second," etc. in front of the word "software" in these claims is merely for convenience so that the various software can be easily and succinctly distinguished. One of ordinary skill in the art will

understand that, since the specification provides antecedents for the various software recited in the claims, and since the various software described in the written description are distinguished among themselves, the written description accordingly provides antecedent for the software when they are referred to in the claims as "first software," "second software," etc.

Thus, for the reasons given above, the written description provides antecedent basis for claims 15-20.

On page 3 of the Office Action, the Examiner rejected claims 15-20 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. However, as should be clear from applicants' response to the Examiner's objection on page 2 of the Office Action, claims 15-20 do comply with the written description requirement

On pages 3-6 of the Office Action, the Examiner rejected claims 15-20 under 35 U.S.C. §112, second paragraph, as being indefinite.

Particularly, the Examiner objects to the use of "first software," "second software," etc., asserting that such terms lack standard meaning.

However, as the Examiner will appreciate, describing portions of a program in terms of its

constituent software parts is common practice. Indeed, when applicants searched issued patents in the patent database of the USPTO using the search terms "first software" and "second software," applicants got hits on 1288 patents that use these terms. Moreover, these terms are also clear in the context of the present patent application as demonstrated above.

Therefore, claims 15-20 are definite under 35 U.S.C. §112, second paragraph, in their use of "first software," "second software," etc.

The Examiner on pages 4-6 raised additional objections to claims 15-17.

The Examiner in lines 9-12 on page 4 of the Office Action quotes a portion of claim 15. However, applicants cannot find this quoted portion in claim 15. Moreover, applicants have reviewed claim 15 and it is grammatical, so applicants are unable to identify the Examiner's objection.

If the Examiner is objecting to the fourth software clause of claim 15, this clause is grammatical. To paraphrase, the fourth software references a determination-rule-storage unit and determines whether said input/output data is invalid data, and determination-rule-storage unit stores rules for

determining whether said input/output data is invalid data. The penultimate and ultimate clauses of claim 15 make it clear that the determination-rule-storage unit stores determination rules that correspond to user attributes and that the fourth software determines whether said input/output data is invalid data in accordance with said determination rules that correspond to user attributes.

Accordingly, claim 15 is grammatical.

The Examiner has a number of objections to claim 16.

First, in line 20, page 4 through line 3 of page 5 of the Office Action, the Examiner quotes language that applicants cannot find in claim 16. Claims 16 does recite "wherein said sixth software determines authorization of the user to use said computer before execution of said third and fourth software." However, the term "said sixth software" does have antecedent basis in the claim.

Second, the Examiner objects to the word "this" in the claim. However, applicants cannot find this word in the claim.

Third, the Examiner asserts that the claim is either incomplete or inconsistent because the limitation

of "acquiring attribute information" is a necessary element of the claim. However, the sixth software does not require attribute information to determine whether the user corresponding to the ID information has authorization to use the computer. As disclosed in the present application, if the ID of the user is not in the database, the user is not authorized.

Accordingly, claim 16 is definite.

The Examiner objected to the term "said operation is unusual" in claim 17 as lacking antecedent basis. Accordingly, claim 17 has been amended to overcome the objection.

On pages 6-9 of the Office Action, the Examiner rejected claims 15-26, and 28 under 35 U.S.C. §102(e) as being anticipated by Rothermel.

Rothermel describes a network security device management system 100 that includes a security policy manager device 110 able to communicate with a supervisor device 120. The supervisor device 120 is associated with a network security device (NSD) 130. The NSD 130 protects a trusted device 220 from an external device.

The NSD 130 stores information about the supervisor device 120 (e.g., the device's network address) with specific security policy information 133.

The NSD 130 also stores any required access information (such as a unique password which the supervisor device 120 must provide in order to gain access to the NSD 130) along with device access information 134. The NSD 130 implements a security policy by executing software 132 and using the stored specific security policy information. An example of a security policy is the following: outgoing FTP connections are allowed only from certain information services associated with IP addresses 220.15.23.52, 220.15.23.53, and 220.15.23.97.

Figures 5A-5D provide an example of a GUI displaying a hierarchical view of a supervisor device, a NSD, and corresponding configuration and network information. As shown in Figure 5A, various information about the supervisor device and the NSD can be displayed textually (e.g., the IP address, connection status, and phone number). Figure 5B provides a graphical view of real-time connections, Figure 5C indicates various users associated with specific IP addresses, and Figure 5D includes information about IP addresses and ports which are currently blocked.

As shown in Figure 6, the NSD software components include a packet filter engine 615 and authentication software 640. The packet filter engine

615 implements the security policy for the NSD. A network security information logging component 660 provides network security information to the supervisor device.

Figure 7 is a flow diagram of a routine 700 executed by the NSD. The routine 700 implements a specific security policy for the NSD by monitoring network information passing between devices of interest (e.g., between an external device and a trusted device), by applying security policy filter rules, and by generating network security information about events of interest.

At 705, the NSD loads its software. At 710, the NSD loads NSD-specific network packet filter rules that will be used to implement the specific security policy. At 715, the NSD monitors any passing network information. At 720, when network information packets of interest are detected, the NSD filters the network information packets. At 725, the NSD generates network security information about any events of interest. At 730, the NSD responds to management messages from the supervisor device. At 790, the NSD determines whether to continue monitoring network information packets.

Figure 8 shows the network packet filtering at 720. The NSD determines whether network information packets match one or more security policy filter rules, applies filter rules to determine what actions to take for the packets, and takes the action. At 805, the NSD receives information about the network information packets of interest. At 810, the NSD determines whether the packets match a filter rule. If so, the NSD at 815 applies the filter rule to determine an action to be taken for the packets. If the NSD determines at 810 that no filter rule applies, the NSD at 820 determines a default action to be taken for the packets. Default actions include denying passage of all packets that are not explicitly approved, blocking spoofing attacks, blocking port space probes, and blocking address space probes. At 825, the NSD takes the determined action on the packets.

Independent claim 15

Applicants' Argument - There are at least two distinctions between Rothermel and independent claim 15.

First, Rothermel fails to disclose acquiring attribute data that is stored in a user-information-storage unit for all users and that corresponds to ID

information associated with input/output data that is input or output over a network.

On page 7 of the Office Action, the Examiner asserts that network addresses and group information are user attributes.

Rothermel defines a network address as an IP address. (Column 1, lines 36-45.) Examples of IP addresses are given in column 10, lines 36-42. As can be seen, these network addresses neither identify a user nor provide any attributes about the user.

The term "group information" is not used in Rothermel. Therefore, it is difficult to determine what the Examiner means by this term. Column 12, line 48 through column 13, line 7, and particularly column 13, lines 5-7, seem to indicate that groups of users can be defined with different levels of access privileges. However, these access privileges, their structure, and the manner in which they are implemented are not defined in Rothermel.

In making this assertion, the Examiner points to several sections of Rothermel.

Column 7, lines 50-53 merely state that the NSD implements a security policy by executing software and by using stored policy information. However, there is no

disclosure in this portion of Rothermel that user attributes are stored in a user-information-storage unit for all users having authorization to use a computer.

Column 2, lines 15-23 state that the decision to take different actions can also be based on additional factors such as the direction of information flow, or on the basis of the sender or the intended recipient of the information. Again, there is no disclosure here of associating user attributes with user identities.

Column 4, lines 49-56 state that security policy templates define default network information filtering rules and use defined aliases to represent various devices. Thus, aliases represent devices rather than users and certainly are not user attributes associated with user identities.

Finally, Figure 5C shows various users associated with specific IP addresses. As discussed above, an IP address is not an attribute of a user. Rather, if it is an attribute an attribute at all, it is an attribute of a network device.

Moreover, Rothermel does not disclose that the user's ID is used to acquire an IP address from the table of Figure 5C. Rothermel does show in connection with Figure 3B that IP addresses can be used in rules such as

rule 316 to the effect that outgoing FTP connections are allowed only from the network devices associated with predefined IP addresses.

However, Rothermel never describes any use of Figure 5C or any instance in which a user is identified and an attribute of the user is looked up from a table or other memory unit on the basis of the user ID.

Accordingly, because Rothermel fails to disclose acquiring a user ID and using that ID to look up an attribute of the user from memory, independent claim 15 is not anticipated by and is not unpatentable over Rothermel.

Second, Rothermel fails to disclose determining whether input/output data is invalid based on rules that are stored in a determination-rule-storage unit and that correspond to user attributes.

Rothermel does describe rules as asserted by the Examiner on page 7 of the Office Action. However none of the rules described in Rothermel are based on user attributes that must be distinct from user IDs because the attributes are acquired from memory based on user IDs.

For example, rule 316 of Rothermel as discussed above does not correspond to a user attribute. Rather,

rule 316 is based on an IP address, which at most is a device attribute and is not a user attribute.

Rule 301 complements rule 316 and specifies that outgoing FTP connections are allowed only from network elements defined as being within the Information Services alias. As can be seen, rule 301 does not correspond to a user attribute.

Indeed, Rothermel describes no rules that are based on user attributes.

In making the assertion that Rothermel discloses rules that are based on user attributes, the Examiner points to several sections of Rothermel.

Column 1, line 56 through column 2, line 5 names various network services and protocols, none of which apply rules that are based on user attributes.

Column 7, lines 50-53 merely state that the NSD implements a security policy by executing software and by using stored policy information. However, there is no disclosure in this portion of Rothermel of rules that are applied based on user attributes.

Column 2, lines 15-23 state that the decision to take different actions can also be based on additional factors such as the direction of information flow, or on the basis of the sender or the intended recipient of the

information. There is no disclosure in this portion of Rothermel of rules that are applied based on user attributes.

Column 11, lines 46-58 describe Figures 3G and 3H as providing examples of information related to events of interest and of network security information of interest. Figure 3G is characterized as showing a GUI for specifying how to generate network security information, such as for a filter rule or service, and how to notify indicated users or devices of the network security information. Figure 3H is characterized as showing various configuration information for an HTTP proxy service, including types of information which may be denied passage as well as may be logged. There is no disclosure in this portion of Rothermel of rules that are applied based on user attributes.

Column 4, lines 49-56 state that security policy templates define default network information filtering rules and use defined aliases to represent various devices. Thus, aliases represent devices rather than users and certainly are not rules that are applied based on user attributes.

Finally, Figure 5C shows various users associated with specific IP addresses. As discussed

above, an IP address is not an attribute of a user and is not a rule that is applied based on user attributes.

Accordingly, because Rothermel fails to disclose rules that are based on user attributes, independent claim 15 is not anticipated by and is not unpatentable over Rothermel.

On page 11 of the Office Action, the Examiner answers applicants' argument that Rothermel does not disclose the third software of independent claim 15, i.e. software that acquires attribute data corresponding to ID information in input/output data from a memory that stores attribute information for the users. Specifically, the Examiner asserts that the claims do not recite associating attributes with user ids.

Applicants cannot agree.

The only way that the attribute information can be stored for users is to stored the information according to user name or some other id for the user. No other arrangement would make sense.

Moreover, independent claim 15 recites that the third software acquires the attribute data based on the ID information that identifies a user. In order to acquire that attribute data from the user-information-

storage unit, the attribute data must be stored in association with the user ID information.

Accordingly, for all of these reasons, these features that distinguish independent claim 15 over Rothermel as previously and currently argued by applicants are based on limitations of independent claim 15.

On page 12 of the Office Action, item (ii), the Examiner insists that aliases such as IP addresses include attribute data.

However, this insistence is not correct for several reasons.

First, if an IP address identifies the user, then the IP address is the ID and not the attribute.

Second, IP addresses are routing numbers that identify machines, not users, and, therefore, cannot be user attributes. That is, an IP address is a numerical identification and logical address that is assigned to devices participating in a computer network. An IP address is typically stored in binary form, but they are usually displayed in human-readable notations, such as 2001:db8:0:1234:0:567:1:1 (this form is provided by version 6 of the Internet Protocol).

Third, Rothermel does not explain Figure 5C and does not state that the IP addresses associated with user names are used for anything, and certainly Rothermel does not disclose that the user name is used to acquire an IP address which is used to acquire a rule. Therefore, the IP address cannot be an attribute of independent claim 15.

Fourth, the present application excludes IP addresses from being user attributes. For example, paragraph 0005 of the substitute specification states that the use of IP addresses creates problems. Paragraph 0008 of the substitute specification then discloses that the use of user attributes overcomes these problems. Thus, the present application states that user attributes, not IP addresses, are used to access rules.

Moreover, paragraph 0042 of the substitute specification discloses that general rules determine invalidity regardless of user attributes and are based on IP addresses. Paragraph 0042 contrasts these rules with attribute rules that determine invalidity based on user attributes such as department or work position.

Therefore, by definition of the present application, an IP address cannot be a user attribute.

On page 12 of the Office Action, item (iii), the Examiner again asserts that applicants argue features that are not in independent claim 15.

However, as discussed above, all argued features are in the corresponding claims.

On page 13 of the Office Action, the Examiner insists that applicants argument that an IP address is not an attribute is not supported by rationale.

However, discussed above is more than adequate rationale to show that an IP address is not a user attribute.

Accordingly, independent claim 15 is not anticipated by and is not unpatentable over Rothermel.

Because independent claim 15 is not anticipated by and is not unpatentable over Rothermel, dependent claims 16-19 are not anticipated by and are not unpatentable over Rothermel.

For similar reasons, independent claims 20-23 and 28 are not anticipated by and are not unpatentable over Rothermel.

Because independent claim 23 is not anticipated by and is not unpatentable over Rothermel, dependent claims 24-26 are not anticipated by and are not unpatentable over Rothermel.

On page 10 of the Office Action, the Examiner rejected claims 19 and 27 under 35 U.S.C. §103(a) as being unpatentable over Rothermel.

However, since independent claims 15 and 23 are not unpatentable over Rothermel, dependent claims 19 and 27 likewise are not unpatentable over Rothermel.

CONCLUSION

In view of the above, the claims of the present application patentably distinguish over the art applied by the Examiner. Accordingly, allowance of these claims and issuance of the present application are respectfully requested.

The Commissioner is hereby authorized to charge any additional fees that may be required, or to credit any overpayment, to account No. 501519.

Respectfully submitted,

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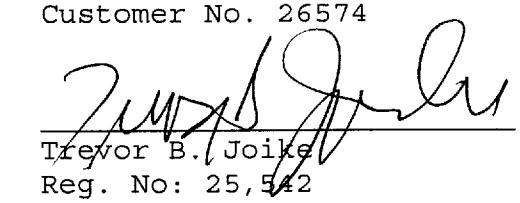
By: 
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